

Atty. Docket No. 0218.002.00003
U.S. Serial No. 10/762,533

IN THE CLAIMS

1. (Currently Amended) A flexible spine stabilization system comprising:
a first rod having a first end portion and a second end portion;
a first flexible element having at least a first slit formed therein, wherein said first flexible element is disposed between the first and second end portions, wherein the first flexible element is integrally formed between said first and second rod portions, and wherein the first flexible element permits motion of the first end portion relative to the second end portion;
a first fastener ~~capable of connecting~~ connected with the first end portion; and
a second fastener ~~capable of connecting~~ connected with the second end portion;
wherein the first and second fasteners are ~~capable of securely disposing~~ secure the first rod at least partially between the exterior of a first vertebra and a second vertebra such that the spine stabilization system is ~~capable of permitting~~ permits limited movement of the first vertebra relative to the second vertebra.
2. (Original) The flexible spine stabilization system of claim 1, wherein the first end portion and the second end portions of the first rod comprise a tubular structure.
3. (Original) The flexible spine stabilization system of claim 1, wherein the first end portion and the second end portions of the first rod are substantially solid.
4. (Original) The flexible spine stabilization system of claim 1, wherein the slit in the first flexible element forms a helical pattern around a portion of the first rod.
5. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element is curved in the neutral position to accommodate the lordosis in the spine.
6. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element limits motion of the first end portion relative to the second end portion from about 1° to about 30° in all planes.

Atty. Docket No. 0218.002.00003
U.S. Serial No. 10/762,533

7. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element limits motion of the first end portion relative to the second end portion from about 0° to about 3° in all planes.
8. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element limits rotation of the first end portion relative to the second end portion from about 1° to about 30°.
9. (Original) The flexible spine stabilization system of claim 8, wherein the first flexible element limits rotation of the first end portion relative to the second end portion from about 1° to about 6°.
10. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element limits rotation of the first end portion relative to the second end portion from about 0° to about 3°.
11. (Original) The flexible spine stabilization system of claim 10, wherein the first flexible element prevents rotation of the first end portion relative to the second end portion.
12. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element limits flexion-extension of the first end portion relative to the second end portion from about 0° to about 30°.
13. (Original) The flexible spine stabilization system of claim 12, wherein the first flexible element limits flexion-extension of the first end portion relative to the second end portion from about 0° to about 3°.
14. (Original) The flexible spine stabilization system of claim 13, wherein the first flexible element limits flexion-extension of the first end portion relative to the second end portion from about 3° to about 30°.

Atty. Docket No. 0218.002.00003
U.S. Serial No. 10/762,533

15. (Original) The flexible spine stabilization system of claim 3, wherein the first flexible element limits lateral bending of the first end portion relative to the second end portion from about 0° to about 30°.
16. (Original) The flexible spine stabilization system of claim 15, wherein the first flexible element limits lateral bending of the first end portion relative to the second end portion from about 0° to about 3°.
16. (Original) The flexible spine stabilization system of claim 15, wherein the first flexible element limits lateral bending of the first end portion relative to the second end portion from about 3° to about 30°.
17. (Original) The flexible spine stabilization system of claim 1, wherein the first flexible element limits axial compression of the first end portion relative to the second end portion from about 0 mm to about 7 mm.
18. (Original) The flexible spine stabilization system of claim 17, wherein the first flexible element limits axial compression of the first end portion relative to the second end portion from about 0.5 mm to about 7 mm.
19. (Original) The flexible spine stabilization system of claim 18, wherein the first flexible element limits axial compression of the first end portion relative to the second end portion from about 0 mm to about 1 mm.
20. (Original) The flexible spine stabilization system of claim 19, wherein the depth of the first slit is from about 20 percent to about 99 percent of the radius of the rod.
21. (Original) The flexible spine stabilization system of claim 20, wherein the depth of the first slit is from about 50 percent to about 80 percent of the radius of the rod.
22. (Original) The flexible spine stabilization system of claim 1, wherein the first flexible element further comprises a second slit formed therein.

Atty. Docket No. 0218.002.00003
U.S. Serial No. 10/762,533

23. (Original) The flexible spine stabilization system of claim 22, wherein the first slit and the second slit in the first flexible element form helical patterns around a portion of the first rod.
24. (Original) The flexible spine stabilization system of claim 23, wherein at least a portion of the first slit and the second slit are disposed in the same location on the first rod.
25. (Original) The flexible spine stabilization system of claim 23, wherein the direction of the helical pattern of the first slit is the same as the direction of the helical pattern of the second slit.
26. (Original) The flexible spine stabilization system of claim 23, wherein the direction of the helical pattern of the first slit is opposite from the direction of the helical pattern of the second slit.
27. (Original) The flexible spine stabilization system of claim 1, wherein the first flexible element forms at least a portion of a transconnector that connects two longitudinal rods.
28. (Original) The flexible spine stabilization system of claim 1, wherein the first and second fasteners are bone fasteners.
29. (Original) The flexible spine stabilization system of claim 1, wherein the first slit formed in the first flexible element extends completely through the rod.
30. (Original) The flexible spine stabilization system of claim 1, wherein the depth of the first slit is from about 20 percent to about 95 percent of the radius of the rod.
31. (Original) The flexible spine stabilization system of claim 30, wherein the depth of the first slit is from about 50 percent to about 80 percent of the radius of the rod.
32. (Previously Presented) The flexible spine stabilization system of claim 1, further comprising:

Atty. Docket No. 0218.002.00003
U.S. Serial No. 10/762,533

a second rod having a third end portion and a fourth end portion;

a second flexible element having at least a first slit formed therein, wherein said second flexible element is disposed between the third and fourth end portions, wherein the second flexible element is integrally formed between said third and fourth rod portions, and wherein the second flexible element permits motion of the third end portion relative to the fourth end portion;

wherein the second rod is at least partially disposed between the exterior of the first vertebra and second vertebra.

33. (Previously Presented) The flexible spine stabilization system of claim 32, wherein the first and second rods permit limited movement of the first vertebra relative to the second vertebra in the anterior-posterior direction and substantially restrict lateral bending.

34. (Previously Presented) The flexible spine stabilization system of claim 1, further comprising a third fastener capable of connecting with a portion of the first rod, and wherein the third fastener is capable of securely disposing the first rod at least partially between the exterior of the second vertebra and third vertebra.

35. (Previously Presented) The flexible spine stabilization system of claim 34, wherein the portion of the first rod disposed between the second vertebra and third vertebra substantially restricts movement of the second vertebra relative to the third vertebra.

36. (Previously Presented) The flexible spine stabilization system of claim 35, wherein the first flexible element permits limited movement of the first vertebra relative to the second vertebra in the anterior-posterior direction and substantially restricts lateral bending.

37. (Previously Presented) The flexible spine stabilization system of claim 34, wherein the portion of the first rod disposed between the second vertebra and third

Atty. Docket No. 0218.002.00003
U.S. Serial No. 10/762,533

vertebra is capable of permitting limited movement of the second vertebra relative to the third vertebra.

38. (Previously Presented) The flexible spine stabilization system of claim 1, wherein the first fastener is a pedicle screw partially disposed in the first vertebra.